

### REMARKS

Claims 12, 17, 18, 36, 37, 42, 44-49, 51, 52, 59, 60, and 62-68 were pending, claims 36-37, 51-52, and 67-68 of which were withdrawn from consideration. By this Amendment, claims 42 and 44 are amended, claims 36-37, 51-52, and 66-68 are cancelled and new claims 69-78 are added. Reconsideration and allowance of pending claims 12, 17, 18, 42, 44-49, 59, 60, 62-65, and 69-78 are respectfully requested in view of the above amendments and the following remarks.

Claims 44-47, 49, 12, 17, 18, 42, 62, 64, 65, and 66 were rejected under 35 U.S.C. § 102(b) as anticipated by Kane et al. (U.S. Patent No. 5,971,614). Applicants traverse this rejection as applied to amended claim 44, which recites, among other things, that “the plurality of drain grooves surround[s] the one or more bearing pads.” In contrast, Kane discloses a drain groove 70a (shown in FIG. 26) that does not surround the one or more bearing pads. With the configuration disclosed in Kane, the seals 95 experience a pressure difference equal to the pocket pressure minus atmospheric pressure, which may be several hundred pounds per square inch. Such pressure may cause excessive wear and leakage. Applicants discovered that the force applied to the seals could be advantageously reduced by surrounding the bearing pads with drain grooves that separate the bearing pads from the seals. Kane does not disclose or suggest such a combination of recitations.

Amended claim 44 incorporates the subject matter of dependent claim 66, which was also rejected as anticipated by Kane. *See* August 1, 2006 Office Action, p. 4. Applicants traverse this rejection to the extent that the Examiner might apply it to amended claim 44. The Examiner inaccurately asserts that groove 9a in Kane is a drain groove. *See* Office Action, p. 4. To the contrary, the groove 9a is a “bearing pocket groove” that fluid flows out of rather than into. *See* Kane, col. 12, lines 22-29. The groove 9a is not a “drain groove” as asserted by the Examiner. Moreover, the Examiner inaccurately equates a fluid connection between the pocket groove 9a and the drain groove 70a with the assertion that the pocket groove 9a, itself, is a drain groove. To the contrary, the groove 9a and groove 70a are separated by a resistive land 71a that prevents the pocket groove 9a from being a part of the drain groove 70a. *See* Kane, FIG. 26 and col. 13, line 66, to col. 14, line 10.

The Examiner’s anticipation rejection of claim 64 asserts that it was known in the prior art to “separate pockets with drains (col. 4, lines 48-60), which would surround the pockets to separate them all.” *See* 8/1/06 Office Action, p. 4 (underlining added). To the

extent that such an assertion might be used to reject amended claim 44, Applicants traverse such a rejection for three reasons. First and foremost, the Examiner mischaracterizes Kane by asserting that Kane discloses that it was prior art to use drains that “surround the pockets to separate them all.” 8/1/06 Office Action, p. 4. To the contrary, Kane merely discloses that conventional hydrostatic pockets were separated by drains. *See Kane*, col. 4, lines 50-61. Separating hydrostatic pockets, as disclosed in Kane’s reference to the prior art, is not the same as surrounding such pockets with drains. Kane and its cited prior art do not disclose or suggest that “the plurality of drain grooves surrounds the one or more bearing pads,” as recited in amended claim 44. Second, the Examiner’s “anticipation” rejection improperly relies on the combination of structures from different prior art references or embodiments. Specifically, the Examiner improperly combines pieces of the Kane embodiment shown in FIGS. 26 and 27 with a discrete discussion of prior art devices in col. 4, lines 48-60 of Kane. The embodiment shown in FIGS. 26 and 27 does not include the drains cited by the Examiner. Accordingly, to combine these discrete teachings, the Examiner would have to provide a *prima facie* obviousness case, which the Examiner has not done. Third, the combination inherently proposed by the Examiner is improper because Kane expressly teaches away from the prior art’s use of drains separating the hydrostatic pockets. *See Kane*, col. 4, lines 50-61.

The remaining references cited in the Office Action, Teramachi (U.S. Patent No. 4,692,039), Berger et al. (U.S. Patent No. 4,753,311), and Kafai (U.S. Patent No. 6,428,210), do not cure Kane’s deficiency, as none of these references disclose or suggest, either alone or in combination, among other recitations, a “plurality of drain grooves surrounding the one or more bearing pads,” as recited in claim 44.

Accordingly, the cited prior art does not disclose or suggest the combination of recitations in amended independent claim 44. Applicants therefore respectfully request the withdrawal of the anticipation rejection of claim 44, as well as its dependent claims 45-47, 49, 12, 17, 18, 42, 62, 64, and 65, which are patentable at least because they depend from patentable claim 44.

Applicants further traverse the anticipation rejection of dependent claim 45, which recites “one or more reservoirs in fluid communication with said plurality of drain grooves.” Contrary to the Examiner’s assertions, the Examiner’s proposed “reservoirs” (reference numbers 80a, 80b, 93a, and 95a in Kane) are not in fluid communication with any drain groove. *See Office Action*, p. 3. The Examiner asserts that the drain grooves include

reference numbers 32a, 32b, 70a, and 36. However, reference numbers 32a and 32b are bearing surfaces, not drain grooves. *See Kane*, col. 7, lines 12-16. Reference number 36 fluidly connects to the ambient environment, not a reservoir. *See Kane*, FIG. 1 and col. 7, lines 3-5. The drain groove 70a fluidly connects to a “port 19a by hole 92a,” and does not fluidly connect to any of the reference numbers identified by the Examiner as the “reservoirs.” *See Kane*, col. 14, line 1. Accordingly, Kane does not disclose or suggest “one or more reservoirs in fluid communication with said plurality of drain grooves,” as recited in claim 45.

Furthermore, the Examiner’s anticipation rejection of claim 45 improperly pieces together different structures in different embodiments in Kane. For example, the Examiner relies on a seal 95 shown in the embodiment shown in FIGS. 26 and 27 of Kane, but points to “reservoirs” 80a, 80b, 93a, and 95a, which are present only in a different embodiment in Kane. The Examiner has not provided a *prima facie* case of obviousness for the inherently proposed combination of two different embodiments in Kane.

Accordingly, Kane does not disclose or suggest “one or more reservoirs in fluid communication with said plurality of drain grooves,” as recited in claim 45. Applicants therefore respectfully request the withdrawal of the anticipation rejection of claim 45.

Applicants further traverse the anticipation rejection of claim 42, which recites that “the side portions of said sealing structure have a substantially upwardly-facing u-shaped cross-section.” In contrast, the seal 95 disclosed in FIG. 27 of Kane has a rectangular cross section, rather than a “u-shaped cross-section,” as recited in claim 42. Accordingly, Kane does not disclose or suggest the combination or recitations in claim 42. Applicants therefore respectfully request the withdrawal of the anticipation rejection of claim 42.

Applicants further specifically traverse the anticipation rejection of claim 62, which recites that “at least one of the plurality of drain grooves extends along the length of said bearing carriage.” In contrast, in the only embodiment of Kane that utilizes a seal (i.e., the embodiment illustrated in FIGS. 26-27), the drain groove 70a does not extend “along the length of said bearing carriage,” as recited in claim 62. The Examiner’s reliance on a discussion of the prior art at col. 9, lines 25-28 of Kane is improper because (a) the disclosed “central drain grooves [that] extend the entire length of the carriage” are not included in the embodiment of Kane that the Examiner relies upon for the anticipation rejection (i.e., the embodiment in FIGS. 26-27), and (b) Kane expressly distinguishes such prior art drain grooves from the “partial” drain grooves disclosed in Kane. Accordingly, Kane does not

disclose or suggest that “at least one of the plurality of drain grooves extends along the length of said bearing carriage,” as recited in claim 62.

Claim 48 (apparently incorrectly identified as claim 47 in the Office Action) was rejected under 35 U.S.C. § 103(a) as obvious over Kane in view of Teramachi (U.S. Patent No. 4,692,039). *See* Office Action, p. 5. Applicants respectfully traverse this rejection. First, claim 48 is patentable at least because it depends from claim 44, which not obvious over Kane in view of Teramachi, as explained above. Second, claim 48 recites that “said bearing rail has a T-shaped cross-sectional area.” The Examiner asserts that it would have been obvious to modify the X-shaped rail in Kane to be T-shaped in view of the T-shaped rail disclosed in Teramachi. To the contrary, Kane emphasizes the criticality of using the “precision curvilinear surface[s]” that make up the X-shape in Kane’s bearing rail. *See* Kane, col. 6, line 65. Accordingly, Kane teaches away from the Examiner’s proposed combination because such a combination would defeat Kane’s goal of utilizing the precision curvilinear surfaces that create the X-shape. Applicants therefore respectfully request the withdrawal of the obviousness rejection of claim 48.

Claim 63 was rejected under 35 U.S.C. § 103(a) as obvious over Kane in view of Berger et al. (U.S. Patent No. 4,753,311). *See* Office Action, p. 5. Claims 59 and 60 were rejected under 35 U.S.C. § 103(a) as obvious over Kane in view of Kafai (U.S. Patent No. 6,428,210). Applicants respectfully traverse these rejections. Claims 63, 59, and 60 are patentable at least because they depend from claim 44, which is patentable over the cited combinations of references, as explained above.

New claims 69-78 further distinguish one or more embodiments of the present invention from the cited references. For example, new claims 70 and 73 each recite, among other things, a “planar resistive land surrounding the supply groove.” In contrast, FIGS 6-8 of Kane disclose that resistive lands surrounding the supply grooves 91a, 91b are generally V-shaped, rather than planar. Kane emphasizes the importance of using such V-shaped surfaces along with the highly accurate contours of curved portions of the surfaces. *See* Kane, col. 6, line 61, to col. 7, line 3. In contrast, the present Applicants discovered that the need for such a high precision curved surface could be mitigated by using planar surfaces such as a “planar resistive land surrounding the supply groove,” as recited in new claims 70 and 73. Kane does not disclose or suggest such a combination of recitations.

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Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP



BENJAMIN L. KIERSZ

Reg. No. 51875

Tel. No. 703 770.7714

Fax No. 703 770.7901

Date: November 1, 2006  
P.O. Box 10500  
McLean, VA 22102  
(703) 770.7900